

# **EXPRESS TERMS**

## **AMENDMENTS TO APPLIANCE EFFICIENCY REGULATIONS**

**(CHANGES ARE PROPOSED FOR THE FOLLOWING  
SECTIONS: 1601(u), 1602(u), 1604(u)(1), 1605.3(u)(1), and  
1607(d)(9))**

**CALIFORNIA CODE OF REGULATIONS,  
TITLE 20, SECTIONS 1601 - 1608**

**April 24, 2006**

## **CALIFORNIA ENERGY COMMISSION**

~~Single-strikeout~~ and single underline indicates proposed “45-Day Language” changes to the current regulations. ~~Double-strikeout~~ and double underline indicates proposed “15-Day Language” changes to the current regulations.

## Section 1601. Scope

- (u) Power supplies, which are single voltage external AC to DC and AC to AC power supplies included with other retail products, and single voltage external AC to DC or AC to AC power supplies sold separately excluding power supplies that are classified as devices for human use under the Federal Food, Drug, and Cosmetic Act and require U.S. Food and Drug Administration listing and approval as a medical device; and consumer audio and video equipment, which are televisions, compact audio products, digital versatile disc players, digital versatile disc recorders, and digital television adapters.

## Section 1602. Definitions

### (u) **Power Supplies and Consumer Audio and Video Equipment.**

“Active mode” means the condition in which the input of a power supply is connected to line voltage AC and the output is connected to a DC or an AC load drawing a fraction of the power supply’s nameplate power output greater than zero.

“Audio standby-passive mode” means the appliance is connected to a power source, produces neither sound nor performs any mechanical function (e.g. playing, recording) but can be switched into another mode with the remote control unit or an internal signal.

“Compact audio product”, also known as a mini, mid, micro, or shelf audio system, means an integrated audio system encased in a single housing that includes an amplifier and radio tuner, attached or separable speakers, and can reproduce audio from one or more of the following media: magnetic tape, CD, DVD, or flash memory. “Compact audio product” does not include products that can be independently powered by internal batteries or that have a powered external satellite antenna, or that can provide a video output signal.

“Computer” means an electronic machine which, by means of stored instructions and information, performs rapid, often complex calculations or compiles, correlates, and selects data.

“Digital camera” means an electronic device used to store images in an electronic format rather than storing the images on film.

“Digital television adapter” means a commercially-available electronic product for which the sole purpose is the conversion of digital video terrestrial broadcast signals to analog NTSC video signals for use by a TV or VCR.

“Digital versatile disk (DVD)” means a laser-encoded plastic medium capable of storing a large amount of digital audio, video, and computer data.

“Digital versatile disc (DVD) player” means a commercially-available electronic product encased in a single housing that includes an integral power supply and for which the sole purpose is the decoding of digitized video signals on a DVD.

“Digital versatile disc (DVD) recorder” means a commercially-available electronic product encased in a single housing that includes an integral power supply and for which the sole purpose is the production or recording

of digitized video signals on a DVD. "DVD recorder" does not include models that have an EPG function.

"Digital video recorder (DVR)" means a device which can record video signals onto a hard disk drive or other device that can store the images digitally. "DVR" does not include models that have an EPG function."

"Electronic programming guide (EPG)" means an application that provides an interactive, onscreen menu of TV listings, and that downloads program information from the vertical blanking interval of a regular TV signal.

"Mobile phone" means a telephone that is not a wireline telephone.

"No-load mode" means the condition in which the input of a power supply is connected to an AC source consistent with the power supply's nameplate AC voltage, but the output is not connected to a product or any other load.

"Personal digital assistant" (PDA) means a lightweight, hand-held computer used as a personal organizer.

"Point of Deployment (POD)" means a card which enables a TV to have secure conditional access to a cable or satellite system.

"Single-voltage external AC to DC or AC to AC power supply" means a device that:

- (1) is designed to convert line voltage AC input into lower voltage DC or AC output;
- (2) is able to convert to only one DC or AC output voltage at a time;
- (3) is sold with, or intended to be used with, a separate end-use product that constitutes the primary load;
- (4) is contained within a separate physical enclosure from the end-use product;
- (5) is connected to the end-use product via a removable or hard-wired male/female electrical connection, cable, cord, or other wiring;
- (6) does not have batteries or battery packs that physically attach directly (including those that are removable) to the power supply unit;
- (7) does not have a battery chemistry or type selector switch and an indicator light; or, does not have a battery chemistry or type selector switch and a state of charge meter;
- (8) has a nameplate output power less than or equal to 250 watts.

"STB on mode" means the appliance is connected to a power source and fulfills its main function.

“STB standby-passive mode” means the appliance is connected to a power source, does not fulfill the main function but can be switched into another mode with the remote control unit or an internal signal.

“Television (TV)” means a commercially-available electronic product consisting of a monitor, which may or may not have a tuner/receiver, encased in a single housing, which is designed to receive and display an analog or digital video signal received from a terrestrial, satellite, cable, or broadband source. “Television” does not include multifunction TVs which have VCR, DVD, DVR, or EPG functions or which have a POD card slot.

“TV standby-passive mode” means the appliance is connected to a power source, produces neither sound nor vision but can be switched into another mode with the remote control unit or an internal signal.

“Video Cassette Recorder (VCR)” means a commercially-available analog recording device that includes an integral power supply and which records television signals onto a tape medium for subsequent viewing.

“Video standby-passive mode” means the appliance is connected to a power source, does not perform any mechanical function (e.g. playing, recording), does not produce video or audio output signals but can be switched into another mode with the remote control unit or an internal signal.

[“Wireline telephone” means a telephone that makes a connection to the telephone network by having a wire from the telephone’s base plugged into a telephone jack on the wall, floor, or other location.](#)

## Section 1604. Test Methods for Specific Appliances.

### (u) Power Supplies and Consumer Audio and Video Equipment.

- (1) **Power Supplies.** The test method for power supplies is US EPA "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies" dated August 11, 2004. ~~Power supplies whose nameplates indicate the capability of operating at multiple voltages and frequencies, shall be tested at both 115 volts @ 60 Hz and 230 volts @ 50 Hz, with the least efficient set of test values used to determine if products qualify for the active mode and no load standards specified in Section 1605.3(u)(1). If testing at both conditions is not possible, the power supply shall be tested at one of the above voltage and frequency combinations that is closest to its nameplate voltage and frequency.~~

### Section 1605.3. State Standards for Non-Federally-Regulated Appliances.

#### (u) Power Supplies and Consumer Audio and Video Equipment.

- (1) **Power Supplies.** The efficiency in the active mode of power supplies when tested at 115 volts at 60 Hz, manufactured on or after the effective dates shall be not less than the applicable values shown (expressed as the decimal equivalent of a percentage); and the energy consumption in the no-load mode of power supplies when tested at 115 volts at 60 Hz, manufactured on or after the effective dates shown shall be not greater than the applicable values shown in Table U-1 or Table U-2.

EXCEPTION TO Section 1605.3(u)(1): A power supply ~~Power supplies~~ that ~~is~~ are made available by a ~~product~~ manufacturer directly to a consumer or to a service or repair facility after and separate from the original sale of the product requiring the power supply as accessories, a service parts, or spare parts for its products ~~manufactured prior to July 1, 2006~~ January 1, 2007 shall not be ~~exempt from~~ required to meet the ~~requirements~~ Standards for Power Supplies in Table U-1 and Table U-2 until five years after the effective dates indicated in Table U-1 and Table U-2 ~~June 30, 2009~~.

~~Power supplies that are made available by a product manufacturer as accessories, service parts, or spare parts for its products manufactured between July 1, 2006~~ January 1, 2007 and December 31, 2007 ~~June 30, 2008 shall be exempt from the requirements in Table U-2 until~~ December 31, 2010 ~~June 30, 2011~~.

**Table U-1**  
**Standards for Power Supplies**

Effective ~~July 1, 2006~~ January 1, 2007 for external power supplies used with laptop computers, mobile phones, printers, print servers, scanners, personal digital assistants (PDAs), and digital cameras.  
Effective July 1, 2007 for external power supplies used with wireline telephones and all other applications.

<i><b>Nameplate Output</b></i>	<i><b>Minimum Efficiency in Active Mode</b></i>
0 to < 1 Watt	$0.49 * \text{Nameplate Output}$
>1 and ≤49 Watts	$0.09 * \ln(\text{Nameplate Output}) + 0.49$
> 49 Watts	0.84
	<i><b>Maximum Energy Consumption in No-Load Mode</b></i>
0 to <10 Watts	0.5 Watts
≥10 to ≤ 250 Watts	0.75 Watts
Where $\ln$ (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.	

**Table U-2**  
**Standards for Power Supplies**  
Effective ~~January~~ July 1, 2008

<i><b>Nameplate Output</b></i>	<i><b>Minimum Efficiency in Active Mode</b></i>
<1 Watt	$0.5 * \text{Nameplate Output}$
≥1 and ≤51 Watts	$0.09 * \ln(\text{Nameplate Output}) + 0.5$
> 51 Watts	0.85
	<i><b>Maximum Energy Consumption in No-Load Mode</b></i>
Any output	0.5 Watts
Where $\ln$ (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.	



## Section 1607. Marking of Appliances.

### (d) Energy Performance Information

#### (9) External Power Supplies.

- (i) Each power supply shall be marked on its nameplate with the appropriate numeral, specified below, if it meets or exceeds both the no-load and average active mode efficiency requirements associated with that numeral as specified below, at each test voltage and frequency value marked on its nameplate, when tested in accordance with the test method in Section 1604(u)(1).

- a. “III” for those models certified under Section 1606 as complying with the standards effective ~~July 1, 2006~~January 1, 2007 for external power supplies used with laptop computers, mobile phones, printers, print servers, scanners, personal digital assistants (PDAs), and digital cameras. Effective July 1, 2007 for external power supplies used with wireline telephones and all other applications as indicated in Table U-1 of this Article, but not as complying with the standards effective ~~January~~July 1, 2008 in Table U-2 of this Article. For models that are able to operate at both 115 volts/60 Hz and 230 volts/50 Hz, but show compliance only at 115 volts, the Roman numeral “III” marking shall include a reference to “115V”, as shown in the following example:



- b. “IV” for those models certified under Section 1606 as complying with the standards effective ~~January~~July 1, 2008 in Table U-2 of this Article. For models that are able to operate at both 115 volts/60 Hz and 230 volts/50 Hz, but show compliance only at 115 volts, the Roman numeral “IV” marking shall include a reference to “115V”, as shown in the following example:



- (ii) The mark shall comply with the following:

- a. **Format.** Roman numeral: III or IV (for models showing compliance only at 115 volts, the Roman numeral marking shall so designate, as referenced in Sections 1607(d)(9)(i)a and 1607(d)(9)(i)b.

b. **Font.** Preferred Times Roman (or other plain serif fonts).

c. **Size.** Legible.

d. **Color.** Text to contrast with the nameplate background.

EXCEPTION TO SECTION 1607(d)(9)(ii)d.: If the marking required by these regulations is molded into the housing of the external power supply, the text need not contrast with the nameplate background.

e. **Permanence.** Indelible.